February 7, 2003

A WRITTEN DOCUMENT USED AS THE BASIS FOR THE TESTIMONY OF STEVE KIEFFER, REPRESENTING THE INTERNATIONAL SIGN ASSOCIATION, BEFORE THE CALIFORNIA ENERGY COMMISSION COMMITTEE WORKSHOP ON THE 2005 BUILDING ENERGY EFFICIENCY STANDARDS HELD ON FEBRUARY 4, 2003, WITH EXPANDED CONTENT TO INCORPORATE ADDITIONAL THOUGHTS BASED ON VERBAL COMMENTS DURING THAT HEARING.

Thank you. My name is Steve Kieffer, I'm here today representing ISA, the International Sign Association, the trade association that represents the on-premise sign industry throughout our country. We appreciate this opportunity to provide input to this commission.

Before proceeding, I'd like to provide the commission with a brief summary of a few pertinent facts regarding my background that leads me to be here today.

I operate a company that manufacturers UL listed signage for regional and national accounts, My company also manufacturer a UL listed luminaire, and a UL certified building structure. We ship our products throughout the United States.

Last year I served as the Chairman of the Board of ISA.

Prior to my time on ISA's Executive Committee, I served for many years on the industry's Technical Committee, including multiple terms as Chairman of that committee.

I'm the sign industry's official delegate to the National Fire Protection Association (NFPA) panel that establishes the National Electric Code (NEC) safety requirements for signs and outline lighting.

I serve on four Underwriters Laboratories (UL) Standard Technical Panels and three bi-national standards committees.

NFPA and UL perform an important function to protect the public health, safety and welfare.

And, I must point out that both NFPA and UL follow strict American National Standards Institute (ANSI) requirements for developing valid national standards, including broad representation and voting on any proposal. All proposals must include valid technical substantiation before they can be considered. An individual's or group's speculation or beliefs carries no weight. Proof must exist before a proposal can be considered.

Your consultant's statements in the March 18, 2002 report "Outdoor Lighting Measures Identification Report" regarding signs does not even begin to provide the proof necessary to validate these proposals. This report should have been rejected without further consideration.

Senate Bill 5X states that you are to regulate Lighting Devices, which are defined to be "a lamp, luminaire, light fixture, lighting control, ballast, or any component of those devices." This clearly includes some of the electrical components used in signs, but does not include signs. SB 5X specifically includes the lighting used for billboards, but does not reference on-premise signage.

Further SB 5X references you Public Resource Code, section 25402 (c) (1) as the guiding force for your work, and in that regulation you are guided to address technically feasible, cost effective operating efficiency, not light reduction measures.

The National Electric Code supports my statements that signs and outline lighting are not lighting devices. The NEC does not regulate signs in Chapter 4 where lighting devices are regulated. They are separately defined and regulated in Chapter 6, Article 600 of the NEC. The only reference to luminaries in Article 600 is when listed luminaries, which are covered in Chapter 4, are use to accomplish outline lighting.

The NEC defines electric signs and outline lighting as:

> Electric Sign. A fixed, stationary, or portable self-contained, electrically illuminated utilization equipment with words or symbols designed to convey information or attract attention.
>
> Outline Lighting. An arrangement of incandescent lamps or electric-discharge lighting to outline or call attention to certain features such as the shape of a building or the decoration of a window.

And the Federal Government defines on-premise signs as:

> **ON-PREMISE SIGN:** A communication device whose message and design relates to a business, an event, goods, profession, or service being conducted, sold, or offered on the same property as where the sign is erected.

Signs and outline lighting are a communications vehicle, not a lighting device. Light is merely one of the tools used in the medium of signage to accomplish communications. In most forms signs are not designed or manufactured to provide area or task lighting. They are designed to communicate a message, and that message is much more than the words you read. It is a total visual presentation, much like other communication mediums such as magazines, newspapers, television and internet web sites. This is a very important

distinction. As you've heard before, signs and outline lighting are legal speech. The burden of proof rest with this commission to technically substantiate any regulation of that speech, and substantiating that such regulations directly accomplish the intended purpose in the least restrictive form possible, thus meeting the "Central Hudson tests". The "Central Hudson tests" are so named because they were first enumerated in a U. S. Supreme Court case brought by Central Hudson Gas and Electric against the Public Service Commission of New York.

Just as we do when working on the NEC, our beliefs don't count. Proof is necessary before we take action. To do otherwise with signs and outline lighting, an important form of speech, is one of the most serious civil rights violation. Its censorship. Many court cases have proven that such censorship can be very expensive to those who undertake the attempt.

Based on my knowledge to date of the actions undertaken, and the content of this proposal, I believe there has been a total failure to comply with the US Constitutional and the US Supreme Court rulings with regard to the impact these proposals will have on civil rights, both the right to free speech and property rights.

Further, even if the "Central Hudson tests" could be passed, and based on my technical knowledge regarding signage I do not believe you can, such restrictions on speech, as contemplated in this proposal, can not occur unless there are viable alternative forms of speech. And again, the US Supreme Court has found it to be highly unlikely that such alternatives exist for signage.

I know that may sound like a bunch of puffery coming from someone representing a perceived special interest. The interests I represent are not just those of my industry, but more significantly those of our customers, businesses both large and small. The people whose speech would be censored.

The regulation of sign lighting devices, lamps and ballasts, has already been accomplish by Federal regulation 10 CFR Part 430 which was issued by the Department of Energy's Office of Energy Efficiency and Renewable Energy. Our position is that for a state to attempt to preempt those Federal regulations is a violation of the commerce clause of the US Constitution.

Section 101 of this proposal contains a number of definitions which are incorrect. They do not conform to the definitions established by the Federal government and accepted by the sign industry. For example, the definition provided by this commission for a marquee is completely incorrect. The Federal government definitions are available on the internet at www.sba.gov/starting/signage. During the hearing CEC staff was provided with a complete printed version of those definitions.

In addition, this proposal will be part of the California Building Code, which includes the Electric Code where the NEC definitions are provided for signs and outline lighting.

The proposed definition of “Sign, panel” refers to a single sub-type of lighted cabinet sign. Cabinets are one of six major types of sign construction. The use of this defined sub-type within the proposed regulations is clearly focused at regulating light output, not energy conservation. A CEC staff member during the hearing stated that their only goal was to require electronic ballasts for use with high output fluorescent lamps. This definition does not serve to accomplish that purpose. Many other types and sub-types of sign construction utilize high output fluorescent lamps. This definition merely serves to enable the regulation of the light output of a specific sign sub-type.

The sign industry is totally opposed to the proposed outdoor lighting zones contained in Section 10-114. This proposal has no direct relationship to energy conservation. It differentiates between individuals and businesses based on their physical location with no direct relationship to the legal use of their land. It is a social re-engineering scheme that will violate the civil rights of those individuals living or working in the declared lighting zones. The proposed restrictions on local government reclassification of such lighting zones is a further expansion of the social re-engineering scheme.

Sign are highly complex, manufactured products where the creative combination of the parts accomplishes communications. What would it take to accomplish technical substantiation prior to developing regulations of signage?

In a prior hearing it was claimed that energy savings in “panel signs” can be accomplished while producing 75% of the present light output. This is an unacceptable combination of multiple hypotheses which must be separated.

The first would be to prove that a lighting system exists which is capable of meeting the present communication needs of signage with identical light output in all weather conditions while gaining an economically viable energy savings.

Such a system must be commercially available for use by the tens of thousands of companies that manufacturer signage. It must not be a technology that provides a supplier company with a monopoly otherwise serious restraint of trade issue will occur. It must work within the total range of sign cabinet variables now present on our country.

A complete range of light sources are presently used in and on sign cabinets to accomplish communications. An acceptable technology must satisfactorily replace all of the existing light sources now used in cabinet signs: incandescent bulbs, neon tubing, cold cathode tubing, fluorescent lamps and HID, or else it is unlikely that regulations can be crafted to successfully mandate a limited

acceptable application. Massive substitutions will occur to circumvent the rules established.

Any energy savings must be measured at two levels. At the micro-economic level, the individual company, a discounted-cash-flow return on investment analysis must be conducted. Any energy savings must be compared against the cost of accomplishing it over the life cycle of the sign, giving full consideration to the acquisition and maintenance costs, utilizing provable life expectance data in real climate conditions.

Additionally, a macro-economic analysis must be performed. Will mandated lighting device changes result in energy / natural resource savings at the primary electrical producer level, and will the cost of those changes be less than the loss of revenue the energy producers will experience?

Separately it would then have to be proven that any regulated reduction in light output for signs does not censor speech by failing to accomplish readability and conspicuity for any person able to gain a driver's license, at all temperatures, in all weather conditions, with the full range of sign face materials, colors, contrast, font types, etc., while functioning in real driving situations, without necessitating an increase in the size of a sign.

This is the same type of testing highway safety engineers conduct to develop minimum safety standards for highway signs.

Any lighting system must meet the safety requirements established by the NEC and ANSI product standards.

Light measurements must occur after aging so they reflective average expected performance. Such preconditioning must include exposure to the atmospheric conditions of temperature and humidity.

Light measured over the surface of a sign face can not vary by more than 15% in order to assure an visual appear by the average person of even illumination.

Failure to address this issue in a fully unbiased, scientific manner would raise serious concerns regarding the violation of civil rights through the censorship of speech without a provable basis in fact.

SIGN CABINET VARIABLES

Sign cabinet height and width varies from less than 1 foot in each dimension to almost unlimited size

Sign cabinet depth varies based on creative design considerations, internal structural requirements, serviceability and location restrictions from as little as a few inches deep to more than four feet deep. The depth of vee-shaped, three and four sided signs is a geometric function of the width of the sign.

The number of faces illuminated by the internal light source commonly ranges from one to four, and may have no direct relationship to the number of faces of the sign.

The following materials and decoration methods are commonly utilized for backlighted faces:

Translucent pigmented acrylic and polycarbonate polymerics

clear, white and ivory decorated polymerics with a mix of translucent and opaque paints, inks or vinyl sheet,

translucent fabrics decorated with a mix of translucent and opaque paints, inks or vinyl sheet

thick clear, white and lightly color translucent acrylic which may also be surface decorated.

Neon and other cold-cathode tubing and incandescent bulbs are often surface mounted on the face of sign cabinets.

Neon and cold-cathode tubing, as well as other lamps, are mounted in sign cabinets to provide face illumination or to create indirect decorative lighting affects.

Sign cabinets containing electric and electronic changeable message units ranging from simple time and temperature displays to real-time, full-color video displays. Dependent on size, location and visibility requirement these cabinets make utilized neon, florescent, incandescent, LED or video screen illumination. None of these light sources is capable of meeting the needs of all applications. When incandescent bulbs, LEDs or video screens are used these displays commonly contain integral ambient light sensing circuitry to accomplish appropriate dimming to maintain readability.

These variables result in the necessity of changing lighting source type, size and spacing in order to accomplish proper illumination to enable communications of the message. Within cabinet signs the lighting device(s) selected and the energy consumed varies greatly because the distance between the light source and sign face varies greatly from one sign to the next.

There are also signs that used luminaries as the lighting device within the sign.

Many signs function outdoors in all weather conditions exposing the electrical components to a broad range of environmental conditions. Lighting devices utilized for signs must continue to operating within the following range of conditions:

Internal sign operating temperature range: - 29 C to + 90 C
Humidity range: 0 to 100%
Normal dust / dirt accumulation on the sign face, particularly on the internal surface where it is not remove by the normal actions of wind, rain or snow.

The range of variables for sign cabinets is immense. Presently graphic designers and sign companies alter the size, quantity and type of lighting to accomplish proper illumination and visual presentation of the customer's message. That message is not just the copy on the sign face, words and/or logo. The complete message is the full visual presentation, the complete sign, including embellishment, enhancement and highlight, some of which are lighting affects, and any building outline lighting presentations.

Not all sign cabinets are illuminated with fluorescent lamps. Many use HID lighting. HID illumination is a practical light source for thick cabinets as the greater distance between the face and lamp allows for visibly acceptable disbursement of the light over the face surface. Large HID lighted signs are used to solve structural and serviceability issues. HID lighted signs can require output wattage of 25 watts or more per square foot per face, however the alternative, multiple rows of fluorescent lamps would consume more energy. The type, quantity and wattage of illumination for a sign face is inversely related to the distance between the light source and the sign face.

A recent historic reproduction, the Chicago Theater vertical sign, is a useful example of the diversity of signage. This is a 76 foot high, 16 foot wide, 4 foot thick double faced sign, which replaced a 75 year old sign, is illuminated with a total of 2,534 - 11 and 25 watt incandescent bulbs. 17,675 watts per face. Total initial calculated wattage is 35,350 for a sign of approximately 900 square feet in size. Interestingly the calculated energy consumption per face, 20 watts per square foot, is within the range of that consumed by many fluorescent internally illuminated signs, and less than many "energy efficient" HID illuminated signs. Actual wattage consumption for this sign is significantly less because 1888 of the 11 watt bulbs are connected to three point flashers to create a chaser effect. Therefore only approximately two-thirds of these bulbs are illuminated at any one time. The actual consumption is approximately 14,214 watts per face. 15.6 watts per square foot, which is within the normal range for fluorescent lighted signs of 10 – 23 watts per square foot.

This case proves that simplistic assumptions based on light source type and inadequate knowledge regarding the diversity of sign types quickly leads to false conclusions.

Similar considerations and concerns exist for outline lighting and for backlighted awnings and marquees, both valid, accepted design alternatives to lighted sign cabinets.

CONCLUSION

On-premise business signs and outline lighting are speech and must be exempt from any regulations within this proposal which have the affect of censoring that speech. In a February 5th e-mail Maziar Shirakh, Senior Mechanical Engineer, California Energy Commission, agreed by stating "Our goal has always been and will always be to promote energy efficiency - cost effectively - without interfering with the message. ".

Therefore, on-premise signs and outline lighting must be exempt from the interior energy consumption regulations, as verbally agreed to by the commission's staff on February 3, 2003 and confirmed during the hearings on February 4th, and they must be exempt from the outdoor lighting regulations. On-premise signs must be exempt from any lighting dimming requirements.

Regulating a single sign sub-type by specifying watts per square foot is not an energy regulation, it is a lighting output regulation which has the impact of censoring speech. This regulation does not automatically result in the use of electronic ballasts. It only differentiates between signs and, dependent on the construction variables of individual signs, results in censorship of the message of some individuals or businesses. That regulation must be dropped as must any reference to signs in the proposed lighting zone restrictions.

If the commission, as stated in the February 5th workshop, is only interested in requiring electronic ballasts for high output fluorescent lamps, then the regulations should state in one simple sentence that signs and outline lighting utilizing high output fluorescent lamps shall be powered by electronic ballasts.

The sign industry remains committed to energy conservation conducted within the scope of our responsibility to assist our customers in the communication of their messages.